

IN THE CLAIMS:

Please amend the claims to read as follows.

1. (Currently Amended) In a method for computing and regulating the distribution of linear load in a multi-nip calender in which a material web is passed through the nips, the nips being defined by a set of rolls arranged in a substantially vertical position and including a variable-crown upper roll, a variable-crown lower roll, the variable-crown upper roll and variable-crown lower roll being structured and arranged to selectively apply a load to at least two intermediate rolls arranged between the upper roll and the lower roll, said at least two intermediate rolls being provided with support cylinders, all of the rolls in the set of rolls being supported such that, when in nip-defining relationship, the rolls have bending lines which are curved downward, the improvement comprising the steps of:
- assigning a value to at least one variable representing a physical property affecting the bending of each of said at least two intermediate rolls;
- applying a first force to said at least two intermediate rolls by means of said variable-crown upper roll;
- applying a second force to said at least two intermediate rolls by means of said variable-crown lower roll;
- applying a support force to each one of said at least two intermediate rolls by means of said support cylinders;
- adjusting at least one of the following to place the set of rolls in a state of equilibrium and

19 a predetermined state of deflection:

21 the first force, the second force, at least one of the support forces and at least one
of the weight forces^{NPM} exerted on each of said at least two intermediate rolls
[, and

regulating at least one of a ratio of linear loads applied to said at least two intermediate rolls, the weight of said at least two intermediate rolls, and support forces applied to said at least two intermediate rolls such that the set of rolls is in a state of equilibrium and a predetermined state of deflection].

2. (Currently Amended) The method of claim 1, wherein step of assigning a value to at least one variable representing a physical property affecting the bending of each of said at least two intermediate rolls comprises the step of assigning a value to the bending rigidity, mass, shape, and material of each of said at least two intermediate rolls.

Claim 3 (Canceled).

4. (Original) The method of claim 1, wherein said at least one physical property is selected from a group consisting of bending rigidity, mass, shape, and material.

5. (Currently Amended) The method of claim 1, further comprising the step of: providing each one of said at least two intermediate rolls with different deflection properties [different than other of said at least two intermediate rolls].

6. (Currently Amended) The method of claim 1, further comprising the step of:
treating the set of rolls as a single unit when [regulating] adjusting the at least one of the first force, the second force, at least one of the support forces and at least one of the weight forces exerted on each of said at least two intermediate rolls [the ratio of linear loads, the weight of said at least two intermediate rolls and the support forces applied to said at least two intermediate rolls].

Claim 7 (Previously Canceled).

C(8. (Original) The method of claim 1, further comprising the step of:
supporting said at least two intermediate rolls on a frame of the calender such that said at least two intermediate rolls are freely movable.

9. (Currently Amended) The method of claim 1, wherein the at least one of the first force, the second force, at least one of the support forces and at least one of the weight forces exerted on each of [a ratio of the linear loads applied to said at least two intermediate rolls, the weight of said at least two intermediate rolls, and support forces applied to] said at least two intermediate rolls is [regulated] such that a loading angle is about 90°, the loading angle being defined as the distribution of linear load in the set of rolls from nip to nip.

10. (Currently Amended) The method of claim 1, wherein the at least one of the first force, the second force, at least one of the support forces and at least one of the weight forces

exerted on each of [a ratio of the linear loads applied to said at least two intermediate rolls, the weight of said at least two intermediate rolls, and support forces applied to] said at least two intermediate rolls is regulated such that a loading angle is adjustable in a range from about 75 to about 80, the loading angle being defined as the distribution of linear load in the set of rolls from nip to nip.

11. (Currently Amended) In an arrangement for computing and regulating the distribution of linear load in a multi-nip calender in which a material web is passed through the nips, the nips being defined by a set of rolls arranged in a substantially vertical position, comprising: [and including]

C1 3 a variable-crown upper roll,

a variable-crown lower roll,

7 at least two intermediate cylinders, said at least two intermediate cylinders positioned between said variable crown upper roll and said variable crown lower roll,

9 wherein the variable-crown upper roll applies a first force to said at least two intermediate cylinders and variable-crown lower roll applies a second force to said at least two intermediate

11 cylinders [being structured and arranged to selectively apply a load to at least two intermediate

rolls arranged between the upper roll and the lower roll], said at least two intermediate rolls being

13 provided with support cylinders, said support cylinders applies a support force to each one of said

at least two intermediate rolls [all of the rolls in] and wherein the set of rolls being supported

15 such that, when in nip-defining relationship, the set of rolls have bending lines which are curved downward, [the improvement comprising:]

17 an automation system and a computing unit for assigning at least one value to a variable
representing a physical property affecting the bending of each of said at least two intermediate
16 rolls and for adjusting at least one of the following to place the set of rolls in a state of
equilibrium and a predetermined state of deflection:

21 the first force, the second force, at least one of the support forces and at least one
of the weight forces^{NAB} exerted on each of said at least two intermediate rolls [regulating at least one
22 of a ratio of linear loads applied to said at least two intermediate rolls, the weight of said at least
two intermediate rolls, and support forces applied to said at least two intermediate rolls such that
23 the set of rolls is in a state of equilibrium and a predetermined state of deflection].

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12. (Currently Amended) The arrangement of claim 11, wherein each one of said at least
two intermediate rolls has different deflection properties [different from other of said at least two
intermediate rolls].

13. (Original) The arrangement of claim 11, wherein the set of rolls is treated as a single
unit.

Claim 14 (Previously Canceled).

15. (Original) The arrangement of claim 11, wherein the at least one physical property
affecting the bending of each of said at least two intermediate rolls is the bending rigidity, mass,
shape, and material of each of said at least two intermediate rolls.

Claim 16 (Canceled).

Claim 17 (Previously Canceled).

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Please add the following new claims:

18. (New) The method of claim 1, prior to the adjusting step further comprising the step
of:

calculating a linear load force applied to each one of said at least two intermediate rolls.
